Abstract

The increasing use of molecular-genetic methods in recent decades has facilitated precise classification of head and neck tumors. This has led to the identification of new entities among salivary, mesenchymal, and sinonasal tumors. Accurate classification not only aids in predicting disease course and determining appropriate treatment intensity but also holds significance in cases where mutations can be targeted with specific therapy. Additionally, newly available immunohistochemical markers can in some cases reliably replace part of the genetic analysis, which brings with it economic advantages and a shorter time needed to examine the biopsy material.

The dissertation summarizes and comments on the publication activity of the author regarding salivary, sinonasal and mesenchymal tumors, with a particular focus on their molecular-genetic background and immunohistochemical findings.

In the field of salivary tumors, the discussion revolves around the detection of *NR4A3* and *NR4A2* gene rearrangements in acinic cell carcinoma, as well as the genetic background of sclerosing polycystic adenoma and its implications on morphology and immunoprofile of individual cases. Furthermore, the dissertation lists four publications presenting various cases of sinonasal tumors, ranging from rare types of sinonasal adenocarcinomas with *ETV6::NTRK3* fusion or SMARCB1 deficiency, through a rare case of biphenotypic sinonasal sarcoma transforming into high-grade rhabdomyosarcoma, to a series of cases featuring a newly defined aggressive sarcoma with *EWSR1::POU2AF3* fusion. Lastly, other mesenchymal tumors occurring in the head and neck region are discussed: in the publication on mesenchymal tumors with kinase gene aberrations, new morphological, immunohistochemical and, above all, molecular-genetic data are presented, including significant findings from the methylation profiling of these tumors; a unique myxoid fibroblastic tumor of the vocal cord with a recurrent *TIMP3::ALK* fusion is described in a collection of seven cases, and finally a rare epithelioid mesenchymal tumor of the soft palate with a *PTCH1::GLI1* fusion is reported.